Appendix: AERMOD Warning and Error Codes

The AERMOD input runstream is checked to identify parameters that are missing or potentially in error, and the input source and meteorological data are checked and flagged for possible erroneous values.

The AERMOD model uses a "defensive programming" approach to eliminate as much as possible of the user's work in debugging the input runstream file. Also, a great deal of effort has been made to eliminate the possibility of run time errors, such as "divide by zero," and to point out questionable input data. Error messages are reported to the user in two ways. A summary of messages is provided in the main output result file, and the user can also request a detailed message listing file.

Message Summary: Whether the user selects a detailed error listing file or not, the AERMOD model output a summary of messages within the output result file. This message table gives the number of messages of each type, together with a detailed list of all the fatal errors and warning messages. During setup processing, if no errors or warnings are generated, then the model simply reports to the user that "SETUP Finishes Successfully."

Detailed Message Listing File: The AERMOD model provide the option of saving a detailed list of all messages generated by the model in a separate output file. To select a detailed message file, select the option in the Output Options form.

THE OUTPUT MESSAGE SUMMARY

There are two message summaries provided in the standard output file of the AERMOD model. The first one is located after the echo of input runstream file images and before the input data summary. This summary will take one of two forms, depending on whether any fatal error or nonfatal warning messages were generated. If there are no errors or warnings generated during the setup processing, the model simply reports that "SETUP Finishes Successfully." If any fatal errors or warning messages were generated during the setup processing, a more detailed summary is provided. This summary provides a message count for each type of message, and a detailed listing of each fatal error and warning message generated. The second message summary table is located at the very end of the standard output result file, and it sums up the messages generated by the complete model run both setup processing and runtime processing.

An example of a setup processing message summary is shown below

```
*** Message Summary For The AERMOD Model Setup ***
 Summary of Total Messages

A Total of           0 Fatal Error Message(s)
A Total of           0 Warning Message(s)
A Total of           0 Information Message(s)


  ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***

  ********   WARNING MESSAGES   ********
               ***  NONE  ***

  **********************************
  *** SETUP Finishes Successfully ***
  **********************************
```

DESCRIPTION OF THE MESSAGE LAYOUT

Three types of messages can be produced by the model during the processing of input runstream images and during model calculations.

These are described briefly below:

- Errors that will halt any further processing, except to identify additional error conditions (type E);
- Warnings that do not halt processing but indicate possible errors or suspect conditions (type W); and
- Informational messages that may be of interest to the user but have no direct bearing on the validity of the results (type I).

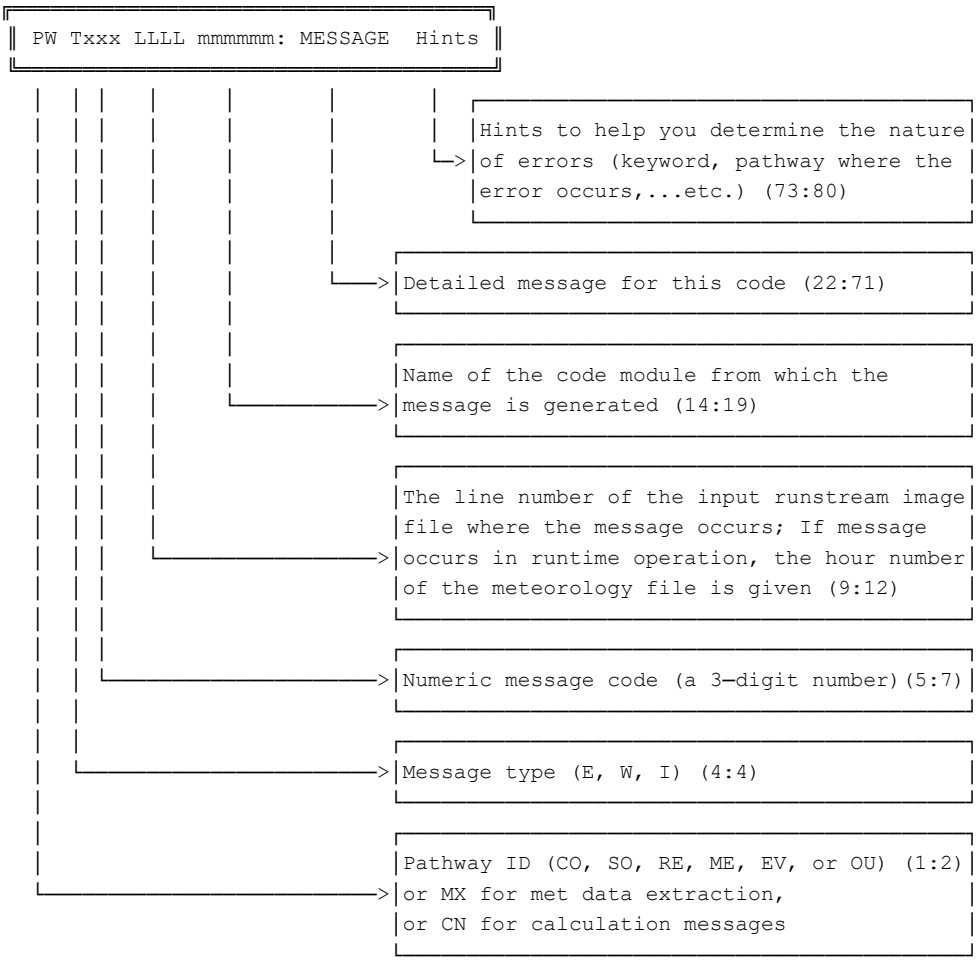
The messages have a consistent structure containing the following information:

- the pathway ID, indicating the pathway origin of the messages;
- the message type followed by a three-digit message number;
- the line number of the input runstream image file for setup messages (or the meteorology hour number for runtime messages);
- the name of the module (e.g. the subroutine name) from which the message is generated;
- a detailed message corresponding to the message code;
- and an 8 character simple hint to help the user spot the possible source of the problem.

The following is an example of a detailed message generated from the CO pathway.

```
CO E100    8 EXPATH: Invalid Pathway Specified. The Troubled Pathway is FF
```

The message syntax is explained in more detail below (values in parenthesis give the column numbers within the message line for each element):


PW Txxx LLLL mmmmmm: MESSAGE Hints
Hints to help you determine the nature of errors (keyword, pathway where the error occurs,...etc.) (73:80)
Detailed message for this code (22:71)
Name of the code module from which the message is generated (14:19)
The line number of the input runstream image file where the message occurs; If message occurs in runtime operation, the hour number of the meteorology file is given (9:12)
Numeric message code (a 3—digit number)(5:7)
Message type (E, W, I) (4:4)
Pathway ID (CO, SO, RE, ME, EV, or OU) (1:2) or MX for met data extraction, or CN for calculation messages

If an error occurs during processing of an included file (either SO INCLUDED or RE INCLUDED), the line number will represent the line number of the included file. The line number of the runstream file is saved before processing the included data, and then restored when processing returns to the main runstream file.

The three message types are identified with the letters E (for errors), W (for warnings), and I (for informational messages). The 3 digit message codes are grouped into general categories corresponding to the different stages of the processing. Theses categories are:

100 199 Input Runstream Image Structure Processing

200 299 Parameter Setup Processing

300 399 Data and Quality Assurance Processing

400 499 Run Time Message Processing

500 599 Input/Output Message Processing

A detailed description of each of the message codes currently used in the model is provided in the next section.

Codes and Messages

Input Runstream Image Structure Processing (Msg 100-195)

This type of message indicates problems with the basic syntax and/or structure of the input runstream image. Typical messages include errors like "Missing mandatory keyword", "Illegal Keyword", ..., etc. If a fatal error of this kind is detected in a runstream image, a fatal error message is written to the message file and any attempt to process data is prohibited, although the remainder of the runstream file is examined for other possible errors. If a warning occurs, data may still be processed, although the inputs should be checked carefully to be sure that the condition causing the warning does not indicate an error.

100 Invalid Pathway Specified. The pathway ID should be a 2 character string. It should be one of the following:

- CO for control pathway,
- SO for source pathway,
- RE for receptor pathway (or EV for event pathway for AERMODEV model),
- ME for meteorology data setting pathway, and
- OU for output format pathway.

Its position is normally confined to columns 1 and 2 (1:2) of the input runstream file. However, the model does allow for a shift of the entire input runstream file of up to 3 columns. If the inputs are shifted, then all input records must be shifted by the same amount. The invalid pathway is repeated at the end of the message.

105 Invalid Keyword Specified. The keyword ID should be an 8 character string. Its position is normally confined to columns 4 to 11 (4:11) of the input runstream file. However, the model does allow for a shift of the entire input runstream file of up to 3 columns. If the inputs are shifted, then all input records must be shifted by the same amount. There should be a space between keyword ID and any other data fields. For a list of valid keywords, refer to Appendix A or Appendix B. The invalid keyword is repeated at the end of the message.

110 Keyword is Not Valid for This Pathway. The input keyword is a valid 8 character string, but it is not valid for the particular pathway. Refer to Appendix A, Appendix B or Section 3 for the correct usage of the keyword. The invalid keyword is repeated at the end of the message.

115 Starting and Finishing Statements do not match. Only One STARTING and one FINISHED statement, respectively, is allowed at the very beginning and the very end of each pathway block. Check the position and frequency to make sure the input runstream file meets the format requirement. The pathway during which the error occurs is included at the end of the message.

120 Pathway is Out of Sequence. The pathways are not input in the correct order. The correct order is CO, SO, RE, ME, and OU for the AERMOD and AERMOD model, and CO, SO, ME, EV, and OU for the AERMODEV model. The offending pathway is given as a hint.

125 Missing FINISHED Statement Runstream file is incomplete. One or more FINISHED statements are missing. A 5 digit status variable is given as a hint. Each digit corresponds to a pathway in the appropriate order, and is a '1' if the pathway is complete and a '0' if the FINISHED is missing. For example, a status of '10111' indicates that the SO pathway was missing a FINISHED statement. Normally such an error will generate additional messages as well.

130 Missing Mandatory Keyword. To run the model, certain mandatory keywords must be present in the input runstream file. For a list of mandatory keywords, see Appendix A or Appendix B. For more detailed information on keyword setup, see the description of message code 105. The missing keyword is included with the message.

135 Duplicate Nonrepeatable Keyword Encountered. More than one instance of a nonrepeatable keyword is encountered. For a list of nonrepeatable keywords, see Appendix A or Appendix B. The repeated keyword is included with the message.

140 Invalid Placement of Keyword. A keyword has been placed out of the acceptable order, or a STARTING or FINISHED keyword has been placed in an INCLUDED file. The order for most keywords is not critical, but the relative order of a few keywords is important for the proper interpretation of the input data. The keyword reference in Section 3 identifies any requirements for the order of keywords. The keyword that was improperly placed is included with the message.

145 Conflicting Options: MULTYEAR and ReStart Option. The multiple year option for processing PM10 values makes use of the restart routines in the model with some slight changes to handle the period averages from year to year. As a result, the MULTYEAR keyword cannot be specified with either the SAVEFILE or INITFILE keywords.

150 Conflicting Options: MULTYEAR for Wrong Pollutant. The multiple year option is provided specifically for the processing of PM10 values to obtain the "highsixthhigh in five years" design value. Its treatment of the high short term values for multiple year periods is not consistent with existing air quality standards for other pollutants. To use the MULTYEAR option, the user must specify a pollutant type (on the CO POLLUTID card) of PM10, PM10, or OTHER.

152 ELEVUNIT card must be first for this pathway. The ELEVUNIT card must be the first non-commented card after STARTING when used on the SO or RE pathway. This requirement is made in order to simplify reviewing runstream files to determine the elevation units used for sources and receptors.

154 Conflicting Options: SCIM option cannot be used with the specified option

155 Conflicting Decay Keyword. The AERMOD model allow for the user to specify the rate of exponential decay either in terms of the halflife (HALFLIFE keyword) or the decay coefficient (DCAYCOEF keyword). If both keywords are specified, then only the first one will be used, and inputs for the second one will be ignored.

156 Option ignored - not valid with SCIM. The specified option is not valid with the SCIM option and is ignored.

157 Wet SCIM Not Supported - Wet SCIM inputs ignored.

158 EMISUNIT Keyword used with more than 1 output type.

159 EMISUNIT Keyword used with incorrect keyword.

160 Duplicate ORIG Secondary Keyword for GRIDPOLR. Only one origin card may be specified for each grid of polar receptors. The network ID for the effected grid is included with the message.

170 Invalid Secondary Key for Receptor GRID. The network ID for the effected grid is included with this message. Refer to Appendix B for the correct syntax of secondary keywords.

175 Missing Secondary Keyword END for Receptor Grid. The END secondary keyword is required for each grid of receptors input by the user (keywords GRIDCART and GRIDPOLR). It signals the end of inputs and triggers the processing of data for that particular network.

180 Conflicting Secondary Keyword for Receptor Grid. Two incompatible secondary keywords have been input for the same grid of receptors, e.g. GDIR and DDIR for the keyword GRIDPOLR, where GDIR specifies to generate directions with uniform spacing, and DDIR specifies that discrete, nonuniform directions are being specified.

185 Missing Receptor Keywords. No Receptors Specified. Since none of the RE pathway keywords are mandatory, a separate error check is made to determine if any of the RE keywords are specified. At least one of the following keywords must be present: GRIDCART, GRIDPOLR, DISCCART, DISCPOLR, or EVALCART.

189 No keywords for OU path and no PERIOD/ANNUAL averages.

190 No Keywords for OU Pathway and No PERIOD or ANNUAL Averages. All of the OU pathway keywords are optional, and in fact the model will run if no keywords are specified on the OU pathway as long as PERIOD or ANNUAL averages are being calculated. However, if there are no OU keywords and no PERIOD or ANNUAL averages, then there will be no output generated by the model, and this fatal error message will be generated.

191 PM-2.5 pollutant ID selected without MAXIFILE is incompatible with EVENTFIL keyword.

192 FASTALL option implies use of FASTAREA option.

195 Incompatible Option Used With SAVEFILE or INITFILE. Either a nonfatal message to warn the user that DAYTABLE results will be overwritten if the model run is restarted, or a fatal error message generated if the TOXXFILE option is selected with either the SAVEFILE or INITFILE options.

196 Gas deposition algorithms are non-DFAULT options.

197 METHOD_2 algorithms for particulates is a non-DFAULT option.

198 TOXICS option obsolete; switch to 07026 executable or update input file.

Parameter Setup Processing (Msg 200-280)

This type of message indicates problems with processing of the parameter fields for the runstream images. Some messages are specific to certain keywords, while others indicate general problems, such as an invalid numeric data field. If a fatal error of this kind is detected in a runstream image, a fatal error message is written to the message file and any attempt to process data is prohibited, although the remainder of the runstream file is examined for other possible errors. If a warning occurs, data may still be processed, although the inputs should be checked carefully to be sure that the condition causing the warning does not indicate an error.

200 Missing Parameter(s). No options were selected for the indicated keyword. Check Appendix B for the list of parameters for the keyword in question.

201 Not Enough Parameters Specified For The Keyword. Check if there are any missing parameters following the indicated keyword. See Appendix B for the required keyword parameters.

202 Too Many Parameters Specified For The Keyword. Refer to Appendix B or Section 3 for the list of acceptable parameters.

203 Invalid Parameter Specified. The inputs for a particular parameter are not valid for some reason. Refer to Appendix B or Section 3. The invalid parameter is included with the message.

204 Option Parameters Conflict. Forced by Default to: Some parameters under the indicated keyword conflict with the other model parameters setting. Refer to Appendix B or Section 3 for the correct parameter usage. The default setting is specified with the message.

205 No Option Parameter Setting. Forced by Default to: No setting was specified for a particular parameter. Refer to Appendix B or Section 3 for the correct parameter usage. The default setting is specified with the message.

207 No Parameters Specified. Default Values Used For. The keyword for which no parameters are specified is included with the message. Refer to Appendix B or Section 3 for a discussion of the default condition.

208 Illegal Numerical Field Encountered. The model may have encountered a nonnumerical character for a numerical input, or the numerical value may exceed the limit on the size of the exponent, which could potentially cause an underflow or an overflow error.

209 Negative Value Appears For A Nonnegative Variable. The effected variable name is provided with the message.

210 Number of Short Term Averages Exceeds Maximum. The user has specified more short term averages on the CO AVERTIME card than the model array limits allow. This array limit is controlled by the NAVE PARAMETER specified in the MAIN1.INC file. The value of NAVE is provided with the message.

211 Duplicate Parameter(s) Specified for Keyword. A duplicate parameter or set of parameters has been specified for the indicated keyword. For example, if more than one POSTFILE keyword is included for the same averaging period and source group, then this error message will be generated.

212 END Encountered Without (X,Y) Points Properly Set. This error occurs during setting up the grid of receptors for a Cartesian Network. This message may occur for example if X coordinate points have been specified without any Y coordinate points for a particular network ID.

213 ELEV Inputs Inconsistent With Option: Input Ignored. This happens when the user inputs elevated terrain heights for receptors when the TERRHGTS option is FLAT. The input terrain heights are ignored and the model proceeds with FLAT terrain modeling.

214 ELEV Inputs Inconsistent With Option: Defaults Used. This happens when the user does not input elevated terrain heights for receptors when the TERRHGTS option is ELEV. The model assumes that the missing terrain heights are at 0.0 meters for those receptors and proceeds with ELEV terrain modeling.

215 FLAG Inputs Inconsistent With Option: Input Ignored. This happens when the user inputs receptor heights above ground for flagpole receptors when the FLAGPOLE keyword option has not been specified. The input flagpole heights are ignored in the model calculations.

216 FLAG Inputs Inconsistent With Option: Defaults Used. This happens when the user does not input receptor heights above ground for flagpole receptors when the FLAGPOLE keyword option has been specified. The model assumes that the missing flagpole heights are equal to the default value specified on the CO FLAGPOLE card. If no default height is specified on the FLAGPOLE card, then a default of 0.0 meters is assumed.

217 More Than One Delimiter In A Field. For example, 12//34 is an illegal input data item for the DAYRANGE card, and STACK1STACK20 is an illegal specification for a range of sources.

218 Number of (X,Y) Points Not Match With Number Of ELEV Or FLAG. Check the number of elevated terrain heights or flagpole receptor heights for the gridded network associated with the indicated line number in the runstream file.

219 Number Of Receptors Specified Exceeds Maximum. The user has specified more receptors on the RE pathway than the model array limits allow. This array limit is controlled by the NREC PARAMETER specified in the MAIN1.INC file. The value of NREC is provided with the message.

220 Missing Origin (Use Default = 0,0) In GRIDPOLR. This is a nonfatal warning message to indicate that the ORIG secondary keyword has not been specified for a particular grid of polar receptors. The model will assume a default origin of (X=0, Y=0).

221 Missing Distance Setting In Polar Network. No distances have been provided (secondary keyword DIST) for the specified grid of polar receptors.

222 Missing Degree Or Distance Setting In Polar Network. Missing a secondary keyword for the specified grid of polar receptors.

223 Missing Distance or Degree Field. No data fields have been specified for the indicated secondary keyword.

224 Number of Receptor Networks Exceeds Maximum. The user has specified more receptor networks of gridded receptors on the RE pathway than the model array limits allow. This array limit is controlled by the NNET PARAMETER specified in the MAIN1.INC file. The value of NNET is provided with the message.

225 Number of XCoords Specified Exceeds Maximum. The user has specified more X coordinate values for a particular grid of receptors than the model array limits allow. This array limit is controlled by the IXM PARAMETER specified in the MAIN1.INC file. The value of IXM is provided with the message.

226 Number of YCoords Specified Exceeds Maximum. The user has specified more Y coordinate values for a particular grid of receptors than the model array limits allow. This array limit is controlled by the IYM PARAMETER specified in the MAIN1.INC file. The value of IYM is provided with the message.

227 No Receptors Were Defined on the RE Pathway. Either through lack of inputs or through errors on the inputs, no receptors have been defined.

228 Default(s) Used for Missing Parameters on Keyword. Either an elevated terrain height or a flagpole receptor height or both are missing for a discrete receptor location. Default value(s) will be used for the missing parameter(s).

229 Too Many Parameters Inputs Ignored on Keyword. Either an elevated terrain height or a flagpole receptor height or both are provided when the corresponding option has not been specified. The unneeded inputs are ignored.

230 Source ID field is too long (>8 characeters); first 8 characeters used.

231 Too Many Numerical Values Specified. For example, more than 36 distance fields may have been specified for a particular group of BOUNDARY receptors.

232 Number Of Specified Sources Exceeds Maximum. The user has specified more sources than the model array limits allow. This array limit is controlled by the NSRC PARAMETER specified in the MAIN1.INC file. The value of NSRC is provided with the message.

233 Building Dimensions Specified for a NonPOINT Source. Building dimensions can only be specified for a POINT source, since the VOLUME and AREA source algorithms do not include building downwash.

234 Too Many Sectors Input. For example, the user may have input too many building heights or widths for a particular source.

235 Number of Source Groups Specified Exceeds Maximum. The user has specified more source groups than the model array limits allow. This array limit is controlled by the NGRP PARAMETER specified in the MAIN1.INC file. The value of NGRP is provided with the message.

236 Not Enough BUILDHGTs Specified for a Source ID. There should be 36 building heights.

237 Not Enough BUILDWIDs Specified for a Source ID. There should be 36 building widths.

238 Not Enough LOWBOUNDs Specified for a Source ID. There should be 36 lower bound flags specified.

239 Not Enough QFACTs Specified for a Source ID. The number of variable emission rate factors specified for a particular source is less than the model expects based on the variable emission rate flag. Check the EMISFACT keyword on the SO pathway in Appendix B of Section 3 for the appropriate number.

240 Inconsistent number of particle categories for a Source ID.

248 No Sources Were Defined on the SO Pathway. There must be at least one LOCATION card and one SRCPARAM card to define at least one source on the SO pathway. Either no cards were input or there were errors on the inputs.

249 Source elevation is missing (-9999.0) for a specified Source ID

250 Duplicate XPNT/DIST or YPNT/DIR Specified for GRID. One of the grid inputs, either an Xcoordinate, Ycoordinate, polar distance range or polar direction, has been specified more than once for the same grid of receptors. This generates a nonfatal warning message.

252 Duplicate Receptor Network ID Specified. A network ID for a grid of receptors (GRIDCART or GRIDPOLR keyword) has been used for more that one network.

254 Number of Receptor Arcs Exceeds Maximum. The user has input more than the number of receptors arcs specified by the NARC PARAMETER in the MAIN1.INC file. The value of NARC is provided with the message.

256 EVALFILE Option Used Without EVALCART Receptors. The EVALFILE output option provides model results designed for model evaluation purposes based on receptors grouped by arc. Such receptors must be identified using the EVALCART keyword. If EVALFILE is selected without any EVALCART receptors, this fatal error message will be generated.

259 Receptor elevation is missing (-9999.0) for a specified Receptor number.

260 Number of Emission Factors Exceeds Maximum. The user has selected an option for variable emission rate factors that exceeds the array storage limit for emission rate factors. The array limit is controlled by the NQF PARAMETER specified in the MAIN1.INC file. The value of NQF is provided with the message.

262 First Vertex Does Not Match LOCATION for AREAPOLY Source. The coordinates of the first vertex defined for an AREAPOLY source must match the source location coordinates provided on the SO LOCATION card.

264 Too Many Vertices Specified for an AREAPOLY Source. The number of vertices specified on the AREAVERT cards must match the number given on the SRCPARAM card for that source.

265 Not Enough Vertices Specified for an AREAPOLY Source. The number of vertices specified on the AREAVERT cards must match the number given on the SRCPARAM card for that source.

270 Number of High Values Specified Exceeds Maximum. The user has selected a high short term value on the OU RECTABLE card that exceeds the array storage limit for high values by receptor. The array limit is controlled by the NVAL PARAMETER specified in the MAIN1.INC file. The value of NVAL is provided with the message.

275 Number of Maximum Values Specified Exceeds Maximum. The user has selected a value for the number of overall maximum values on the OU MAXTABLE card that exceeds the array storage limit for overall maximum values. The array limit is controlled by the NMAX PARAMETER specified in the MAIN1.INC file. The value of NMAX is provided with the message.

280 Number of Output Types Specified Exceeds Maximum.

281 Number of OLMGROUPs Specified Exceeds Maximum.

Setup Data and Quality Assurance (Msg 300-395)

This type of message indicates problems with the actual values of the parameter data on the input runstream image. The basic structure and syntax of the input card is correct, but one or more of the inputs is invalid or suspicious. These messages include quality assurance checks on various model inputs. Typical messages will tell the consistency of parameters and data for the setup and run of the model. If a fatal error of this kind is detected in a runstream image, a fatal error message is written to the message file and any attempt to process data is prohibited. If a warning occurs, data may or may not be processed, depending on the processing requirements specified within the run stream input data.

300 Specified Source ID Has Not Been Defined Yet. The message indicates that the user attempts to use a source ID on a keyword before defining this source ID on a SO LOCATION card. It could indicate an error in specifying the source ID, an omission of a LOCATION card, or an error in the order of inputs.

310 Attempt to Define Duplicate LOCATION Card for Source. There can be only one LOCATION card for each source ID specified. The source ID is included with the message.

315 Attempt to Define Duplicate SRCPARAM Card for Source. There can be only one SRCPARAM card for each source ID specified. The source ID is included with the message.

320 Source Parameter May Be OutofRange for Parameter. The value of one of the source parameters may be either too large or too small. The name of the parameter is provided with the message. Use the line number provided to locate the card in question.

325 Negative Exit Velocity (Set=1.0E5) for Source ID. The exit velocity for the specified source ID was input as a negative value. Since the model currently cannot handle sources with downward momentum, the exit

velocity is set to a very small value (1.0E5 m/s) and modeling proceeds. This nonfatal message is generated to warn the user that the input may be in error.

330 Mass Fraction Parameters Do Not Sum to 1. (within +/ 2 percent) for a particular source.

332 Mass Fraction Parameter OutofRange for a particular source. Must be between 0.0 and 1.0, inclusive.

334 Particle Density OutofRange for a particular source. Must be greater than 0.0.

342 Source ID Mismatch in the Hourly Emissions File. The source ID read from the hourly emissions file does not match what is expected based on the SO HOUREMIS card. A source ID and/or date may be out of order or missing in the hourly emissions file. The source ID read from the file is provided with the error message.

344 Hourly Emission Rate is Zero. The emission rate read from the hourly emission file is zero for the specified date. This is written as an informational message, and does not halt processing of the data.

350 Julian Day Out Of Range. This error occurs if the Julian Day selected is less than zero or greater than 366. Check ME setup to ensure the Julian Day selection.

360 2digit Year Specified. Valid for the range 19012099. Four digit years are valid for the entire range of Gregorian dates, but two digit years are accepted.

370 Invalid Date: 2/29 In a Nonleap Year. The year has been identified as a leap year, and a date of 2/29 (February 29) has been specified on the DAYRANGE card. Check the year and/or the date specification.

380 This Input Variable is OutofRange. The indicated value may be too large or too small. Use the line number to locate the card in question, and check the variable for a possible error.

385 Averaging period does not equal 1-hour averages for the TOXXFILE option for the AERMOD model. The AERMOD model will generate TOXXFILE outputs for other averaging periods, but the TOXX model component of TOXST currently supports only the 1-hour averages. This is a non-fatal warning message.

390 Latitude in the Scalar File is Not Valid. The latitude is read from the header record of the surface/scalar meterological data file. If the value is not within the valid range of 0 to 90 degrees, then this error message is generated.

391 Aspect ratio (length/width) of an area source is greater than 10. The area source algorithm in the AERMOD model allows for specifying area sources as elongated rectangles, however, if the aspect ratio exceeds 10 a warning message will be printed out. The user should subdivide the area so that each sub area has an aspect ratio of less than 10.

392 Error Decoding Latitude. The latitude is read from the header record of the surface/scalar meteorological data file. The value of the latitude should be followed by an 'N' or an 'S' for the northern or southern hemispheres.

If the value cannot be decoded properly, then this error message is generated.

395 Met. Data Error; Incompatible Version of AERMET. Based on the version date given in the header record of the surface meteorological data file, the meteorological data were generated by an older, incompatible version of AERMET.

Runtime Message (Msg 400-499)

This type of message is generated during the model run. Setup processing has been completed successfully, and the message is generated during the performance of model calculations. Typical messages will tell the information and error during the model run. If a fatal error of this kind is detected during model execution, a fatal error message is written to the message file and any further processing of the data is prohibited. The rest of the meteorological data file will be read and quality assurance checked to identify additional errors. If a warning occurs, data may or may not be processed, depending on the processing requirements specified within the run stream input data.

400 No Convergence Reached in SUB. CUBIC. The CUBIC module is used to solve a cubic equation for the SchulmanScire BLP plume rise. The routine uses Newton's method, which is an iterative approach to determining the solution to the cubic equation. This message is generated if the routine does not converge within 24 iterations. The message is provided for informational purposes and processing will continue. The date of occurrence is provided with the message.

405 The Value of PHEE Exceeds 1.0. If the value of PHEE, the fraction of the plume material below Hcrit, is greater than 1.0, then this informational message is generated. The value of PHEE is then set to 1.0 for the specified date.

410 Flow Vector OutofRange. The flow vector must be between 0 and 360 degrees, inclusive. The date of occurrence is provided with the message (in the form of year, month, day, hour as YYMMDDHH)

420 Wind Speed OutofRange. The wind speed value may be either too large or too small. An error is generated if the speed is less than 0.0, and a warning is generated if the speed is greater than 30.0 m/s. The date of occurrence is provided with the message (in the form of year, month, day, hour as YYMMDDHH).

430 Ambient Temperature Data OutofRange. The ambient temperature value may be either too large or too small. A warning is generated if the temperature is less than 250 K or greater than 320 K. The date of occurrence is provided with the message (in the form of year, month, day, hour as YYMMDDHH).

432 Surface Friction Velocity OutofRange. The surface friction velocity may by too large. A warning is generated if the surface friction velocity is greater than 1.5 m/s. The date of occurrence is provided with the message (in the form of year, month, day, hour as YYMMDDHH).

436 Mixing Height Data OutofRange. The mixing height value may by too large. A warning is generated if the mixing height is greater than 3,000 meters. The date of occurrence is provided with the message (in the form of year, month, day, hour as YYMMDDHH).

440 Calm Hour Identified in Meteorology Data File. This message is generated if a calm hour is identified, and provides the date of occurrence (in the form of year, month, day, hour as YYMMDDHH). The message will be generated whether or not the calms processing option is used.

450 Error in Meteorology File Record Out of Sequence. There is an error in the sequence of the hourly meteorological data file. The message also provides the date of occurrence (in the form of year, month, day, hour as YYMMDDHH).

455 Date/Time Mismatch on Hourly Emission File. There is mismatch in the date/time field between the meteorological data file and the hourly emission file. The message also provides the date of the occurrence from the surface/scalar file (in the form of year, month, day, hour as YYMMDDHH).

456 Date/Time Mismatch on Scalar and Profile Data. There is mismatch in the date/time field between the surface/scalar and the profile meteorological data files. The message also provides the date of the occurrence from the surface/scalar file (in the form of year, month, day, hour as YYMMDDHH).

460 Missing Hour Identified in Meteorology Data File. At least one of the meteorological variables is missing or invalid for the hour specified (in the form of year, month, day, hour as YYMMDDHH). If the missing data processing option is not used, then this message will be generated and any further calculations with the data will be aborted. The model will continue to read through the meteorological data file and check the data.

465 Number of Profile Levels Exceeds the Maximum. The profile meteorological data file includes more than the maximum number of levels, specified by the MXPLVLS PARAMETER in the MAIN1.INC file. The value of MXPLVLS is provided with the message.

470 Mixing Height Value is Less Than or Equal to 0.0. This is an informational message that may indicate an error in the meteorological data file. Since the plume will always be above a mixing of 0.0 or less, no calculations are performed for the hour specified (in the form of year, month, day, hour as YYMMDDHH).

475 The Reference Height is Higher than 100 m. The reference height is read from the surface/scalar meteorological data file. This warning message is generated if the reference height is higher than 100 meters. Since data for the reference height are used in surface layer similarity profiles, the reference height should be within the surface layer (between about 20 and 100 times the surface roughness length).

Input/Output Messages (Msg 500-599)

This type of message is generated during the model input and output. Typical messages will tell the type of I/O operation (e.g., opening, reading or writing to a file), and the type of file. If a fatal error of this kind is detected in a runstream image, a fatal error message is written to the message file and any attempt to process data is prohibited. If a warning occurs, data may or may not be processed, depending on the processing requirements specified within the run stream input data.

500 Fatal Error Occurs During Opening of the Data File. The file specified can not be opened properly. This may be the runstream file itself, the meteorological data file, or one of the special purpose output files. This may happen when the file called is not in the specified path, or an illegal filename is specified. If no errors are found in the filename specification, then this message may also indicate that there is not enough memory available to run the program, since opening a file causes a buffer to be opened which takes up additional memory in RAM. For the special purpose output files, the hint field includes character string identifying the type of file and the file unit number, e.g., 'PLTFL312'.

510 Fatal Error Occurs During Reading of the File. File is missing, incorrect file type, or illegal data field encountered. Check the indicated file for possible problems. As with error number 500, this message may also

indicate that there is not enough memory available to run the program if no other source of the problem can be identified.

520 Fatal Error Occurs During Writing to the File. Similar to message 510, except that it occurs during a write operation.

530 Error Occurs Reading Met Station or Year: File Says. The surface and upper air station numbers and years specified on the ME pathway do not agree with the values on the first record of the meteorological data file. The value from the file is printed out to help resolve the problem.

540 No RECTABLE/MAXTABLE/DAYTABLE for Averaging Period. No printed output options selected for a particular averaging period. This is a nonfatal warning condition for the AERMOD model.

550 File Unit/Name Conflict for the Output Option. This error indicates that a problem exists with the filename and file unit specification for one of the special purpose output files. The associated keyword is provided as a hint. The same filename may have been used for more than one file unit, or vice versa.

560 User Specified File Unit < 20 for OU Keyword. A file unit of less than 20 has been specified for the indicated special purpose output files. This is a fatal error condition. File units of less than 20 are reserved for system files. Specify a unit number in the range of 20 to 100.

565 Possible conflict With Dynamically Allocated FUNIT. A file unit specified for the indicated special purpose output files is in the range > 100, and may therefore conflict with file units dynamically allocated for special purpose files by the model. This is typically a nonfatal warning condition.

570 Problem Reading Temporary Event File for Event. The AERMOD model stores high value events in a temporary file that is used to create the input file for the AERMODEV model, if requested, and also to store the high values for the summary tables at the end of the printed output file. A problem has been encountered reading this file, possibly because the concentration value was too large and overflowed the fixed format field of F14.5.

580 EndofFile Reached Trying to Read a Data File. The AERMOD model has encountered an endoffile trying the read the indicated file. This may appear when trying to "re-start" a model run with the CO INITFILE card if there is an error with the initialization file. Check the data file for the correct filename.